

DENKA ES-L

Soil stabilization hardening accelerator

Description

Based on DENKA ES, **DENKA ES-L** is a revolutionary grout hardening accelerator that has a gelation time of approximately 10 minutes when used with cement.

Features

- Inorganic material composed of cement minerals
- Excellent permeability in combination with fine cement or super fine cement
- Gelation time can be controlled by using DENKA SETTER D-300 without change in strength
- Seawater useable in the cement mix
- Excellent durability, non-leaching

Applications

- Permeation grouting
- Soil stabilization
- High strength work

Packaging

- 20kg paper bags

Shelf Life

- 8 months from production date
- Determine the production date by reference to the lot number. A lot number of "1AXXX" corresponds to production in Jan 2001; "2BXXX" to Feb 2002 and so on.

Standard Mix Proportions

Cement grade	Primary materials (kg/500L)			Accelerator additive (kg/500L)		
	Cement	WR	Water	ES-L	Water	Setter
Blast furnace cement type B	300	0	401	75	474	ES-Lx 0.5~1.5%
Ultrafine cement (Colloidal Cement)	300	0	400	75	474	
Super ultrafine cement (Colloidal Super)	250	Cx1%	415	50	485	

Chemical Properties

CaO	Al ₂ O ₃	SiO ₂	Fe ₂ O ₃	SO ₃
41.4	21.0	5.1	1.5	29.1

Physical Properties

Compressive strength

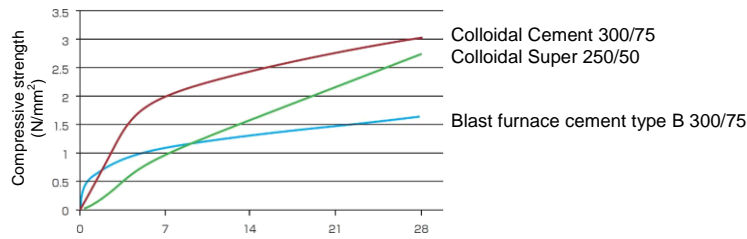


Fig 1. After pouring at 20°C, demoulding after 1 day, and curing in water at 20°C

Gelation time

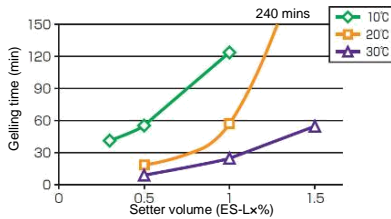


Fig 2. Gel time of BB cement as a function of setter volume

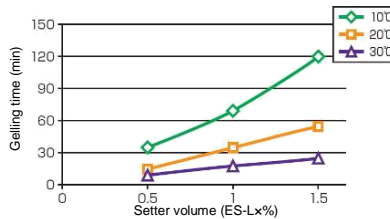


Fig 3. Gel time of Colloidal Cement as a function of setter volume

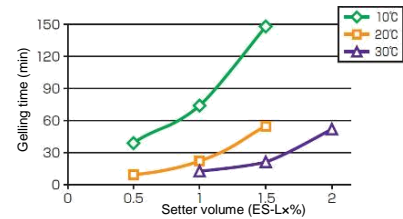


Fig 4. Gel time of Colloidal Super as a function of setter volume

Usage / Handling Precautions

- Materials must be charged in the following sequence: water, setter, ES-L, cement. Mistakes in the charging sequence will cause irregularities during hardening.
- Refer to the Safety Data Sheet (SDS) before use.
- Wear protective gear (goggles, mask, gloves, and rubber boots) while handling the product. Do not dispose of the product in drains.
- Once opened, the product should be used up completely. Otherwise, reseal for storage.
- The product should be stored in a dry area, indoors, and out of direct sunlight.
- For further information, please contact DENKA.

Limitation of Liability

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